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Effective action to reduce greenhouse gas emissions is necessary to prevent costly and potentially catastrophic environmental and economic damages from climate change. The Center on Budget and Policy Priorities is not making recommendations about how much we need to reduce emissions; that is not our area of expertise and we leave those recommendations to experts in environmental policy. Instead, our focus is on how climate change legislation might affect 1) the budgets of American families, especially those of modest means; and 2) the federal budget.

Our analysis indicates that Congress can develop climate change policy that is environmentally and economically sound and fiscally responsible, and that treats low-income families equitably, avoiding increases in poverty and hardship. To achieve these objectives, however, the policy has to be well designed. This means the policy must generate sufficient budget resources to address the requirements and challenges of sound climate-change policy — including the resources needed to offset the direct impact of those policies on the federal budget — and must cushion the impact on vulnerable populations, especially people with low incomes.

Four Key Numbers on Climate Policy, the Budget, and Low-Income Families

Our analysis of the effects of climate-change policy on the federal budget and the budgets of low-income households can be summed up in four key sets of numbers.

1. \$750 - \$950 per year: the average increase in energy-related costs for the poorest fifth of the population from a modest (15 percent) emissions reduction

Effective policies to reduce greenhouse-gas emissions work in part by raising the prices of fossil-fuel energy products to encourage energy efficiency and the substitution of clean energy sources for fossil fuel. This is essential to prevent extensive environmental and economic damage from climate change. However, it will raise costs to consumers for a wide array of products and services, from gasoline and electricity to food, mass transit, and other products or services with significant energy inputs.

Households with limited incomes will be affected the most by those higher prices, since they spend a larger share of their incomes on energy-related products and services than more affluent households do. They also are less able to afford investments that can reduce their energy consumption, such as buying a more efficient car or a new heating and cooling system. If nothing is done to protect people of limited means, many more of them will slip into poverty, those who are poor will become poorer, and the trend toward widening income inequality will be aggravated.

\$750 to \$950 per year is our estimate of how much, if left to fend for themselves, average families in the poorest 20 percent of the population would have to come up with to cover the increased costs

arising from a 15 percent reduction in emissions.¹ This is a group whose average income is only modestly over \$13,000 a year, and our \$750-\$950 estimate already takes into account increases in cost of living adjustments that they may receive, such as through the annual Social Security COLA, as a result of higher energy costs. Moreover, the 15 percent reduction in emissions, which is what CBO uses in its analysis, is relatively modest by the standards of current proposals. It is 15 percent below business-as-usual levels (what emissions would be if there were no restrictions), *not* 15 percent below the 1990 or 2005 levels that are often used as benchmarks in legislative proposals. Those benchmarks themselves are well below business-as-usual levels.

2. \$50 billion to \$300 billion per year: resources potentially generated by climate-change policies to help low-income consumers and to address other climate-change-related needs

Fortunately, the same climate-change measures that generate higher energy-related costs can also generate substantial resources to cover those costs. CBO estimates that various recent proposals to limit greenhouse-gas emissions by establishing a cap-and-trade system would create a valuable resource — emission permits — that would be worth \$50 billion to \$300 billion per year by 2020, depending on the specifics of each proposal. That is how much revenue the government could expect to raise if it auctioned off all of the permits. It is also how much revenue the government could expect to raise if a carbon tax with a similar effect on limiting emissions were used instead of a cap-and-trade approach.

3. Approximately 14 percent: share of auction proceeds or carbon tax revenues needed to fully offset the increased energy-related costs faced by low-income consumers

The amount of revenue the government could raise by auctioning off all of the permits in a cap-and-trade system is far more than what would be needed to protect low-income consumers from higher energy-related prices arising from climate-change legislation. We estimate that a program designed according to the principles laid out later in this testimony, which would fully offset the impact on the poorest 20 percent of people and also provide some relief to many hard-pressed working families in the next 20 percent, could be fully funded with approximately 14 percent of the resources that would be generated by auctioning off all the allowances in a cap-and-trade system, or by a carbon tax.

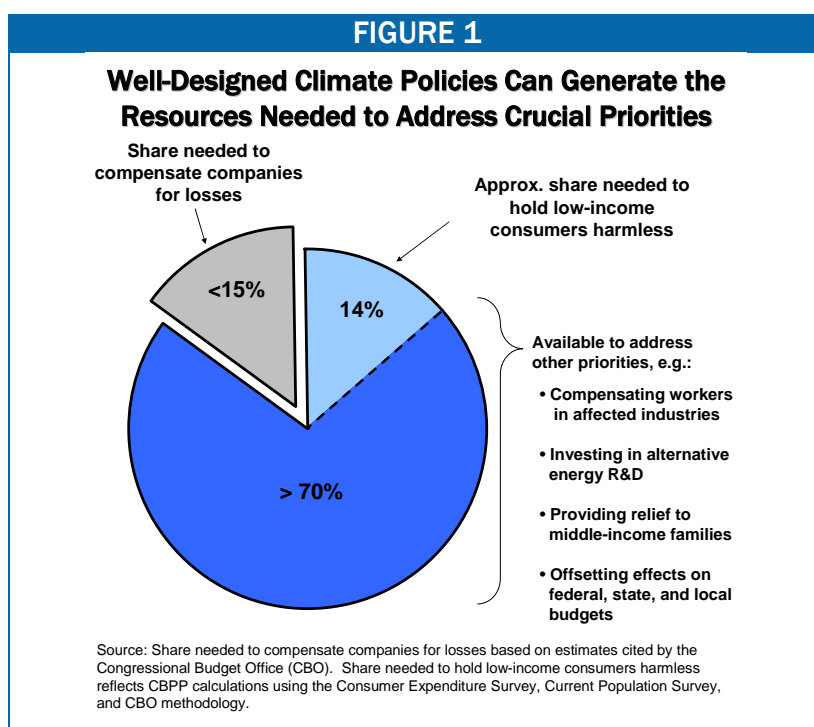
The specific dollar amounts in our first two sets of numbers — \$750 to \$950 per year of added costs for low-income consumers and \$50 to \$300 billion per year of potential revenue are tied to

¹ The Congressional Budget Office has provided a figure of \$680 for the average increase in cost for the bottom 20 percent of households. It should be noted that the \$680 figure is for the fifth of households with the lowest incomes, *not* the poorest fifth of the U.S. population. There is an important difference. If one simply ranks households by income, regardless of household size, then the bottom fifth of households disproportionately consists of one- and two-person households, and as a result, includes significantly less than one-fifth of the people in the United States. Moreover, the bottom fifth of households, if measured in this manner, includes many small households that are not poor (i.e., that are above the poverty line), while missing many larger households that are poor. (The poverty line is adjusted by household size.) The \$680 figure for the bottom fifth of households is measured in this manner. CBO has also developed a standard methodology to address this household-size problem when dividing households into income quintiles (or income “fifths”) and uses that methodology in most of the work it conducts on income distribution issues. We use the CBO size-adjustment methodology here to allow us to examine the poorest fifth of the population, rather than the bottom fifth of households irrespective of household size. This produces a figure of \$750 to \$950 for the poorest fifth of the U.S. population.

specific emissions targets, but the 14 percent figure is not. When the emissions target is looser (and hence the emissions reduction is smaller) — as it would be in the early years of most proposals — the dollar amount of revenue that could be raised would be lower, but so too would be the increase in energy prices and the amount of added costs that households would face. As the cap tightens and larger emissions reductions are called for, the added costs to households increase, but so too does the potential revenue that would be available to offset those costs. In each case, the revenue needed to protect low-income consumers would be about 14 percent of the revenue that could be generated.

4. Less than 15 percent: share of potential budget resources needed to fully compensate energy companies and other emitters for financial losses due to climate-change policies

Although the resources that can be generated by sound climate-change policies are substantial, so too are the budget claims arising from those policies. Besides the need to protect vulnerable populations, those claims include basic research into alternative energy sources, assistance for workers and communities that depend on the coal industry and other industries most affected by the shift to a less carbon-intensive economy, and other needs. In addition, higher energy prices will drive up the cost to federal, state, and local governments of providing many important services and benefits. Unless these costs are offset, government services will have to be reduced or taxes raised, or the federal deficit will rise.



In a cap-and-trade system, making sure there are adequate budget resources requires that most of the emission allowances are auctioned off, not given away for free to energy companies and other emitters due to misconceptions about the financial losses they would incur. One misconception is that those losses would be very large. CBO's review of the evidence, however, concludes that less than 15 percent of the total value of the allowances would be sufficient to offset the net financial losses of companies affected by policies to restrict emissions. More than that would simply create what CBO has called “windfall profits” for companies receiving the free allowances.

A related misconception about cap-and-trade may also contribute to the belief that large numbers of emission allowances should be given away to energy companies and other industrial emitters. This is the mistaken belief that energy prices will not rise if the allowances are given away. That belief is *not* correct; it flies in the face of the basic law of supply and demand. A cap on emissions

will limit the amount of energy produced from fossil fuels. Regardless of whether the government gives away or sells the allowances, market forces will raise the price of fossil-fuel energy to the point where the amount demanded will fall to equal the amount supplied. Either way, energy companies will be able to sell their products at the higher price. The increase in prices is the source of windfall profits for the companies that receive allowances for free but are able to charge the higher price.

There are legitimate policy issues around the choice between a carbon tax and a cap-and-trade mechanism. But we should not let misconceptions cloud the debate or create false choices. Here is how Harvard economist Greg Mankiw, who served as Chairman of President Bush's Council of Economic Advisers, has characterized a cap-and-trade mechanism under which the allowances are given away:

Economists recognize that a cap-and-trade system [in which the allowances are given away to emitters] is equivalent to a tax on carbon emissions with the tax revenue rebated to existing carbon emitters, such as energy companies. That is,

Cap-and-trade [under which the allowances are given away to emitters] = Carbon tax + Corporate welfare.²

Avoiding Regressive Outcomes While Meeting Other Climate-Related Budget Priorities

The policies needed to reduce greenhouse-gas emissions would, by themselves, result in regressive changes in energy prices. But they also can generate substantial revenue that could be used to offset those regressive impacts. Our analysis, like that of CBO, shows that the potential revenue from auctioning off emission allowances under a cap-and-trade system could yield more than enough revenue to offset the losses likely to be experienced by low- and moderate-income families and by workers in the industries hit hardest by the adjustment to a less carbon-intensive economy. The revenue could be sufficient both to address these issues and to meet various other legitimate purposes arising from the legislation as well (see figure 1).

In contrast, giving away a substantial fraction of emission allowances to existing energy producers would do almost nothing to compensate low- and moderate-income families for their losses. A very large percentage of the benefits of such a giveaway would go to shareholders of the energy companies, most of whom have high incomes, while little revenue would be available to mitigate the effects on those least well-off.

Addressing regressivity and adjustment costs would not be the only claims on the resources that could be generated by a cap-and-trade system or carbon tax. Governments at all levels would pay more for the energy and energy-related products that they consume directly. For example, the Defense Department is the single largest consumer of energy in the United States. In addition, there would be impacts on living costs and economic activity, which, while modest in the overall economy, could nevertheless trigger increases in automatic cost-of-living adjustments in Social Security and other benefit programs and some modest reductions in tax revenues. These issues can

² Greg Mankiw, "Greg Mankiw's Blog: Random Observations for Students of Economics," August 2, 2007.

be addressed — and any increases in deficits and debt avoided — by using a share of the allowances to offset such tax and expenditure changes. (Note: action to reduce the damages from climate change should have positive effects on the budget over the longer run, by reducing government expenditures for such things as natural disasters, crop failures, and disease epidemics. In other words, in the absence of effective climate-change policies, natural events are likely to occur sooner or later that entail large federal costs and throw the budget farther out of whack.)

In addition, although higher energy prices would create strong incentives for energy conservation and for investment in clean-energy technologies, there will be claims for additional subsidies to encourage a wide variety of activities in the name of combating climate change. In many cases (including various types of basic alternative energy research), such investments can be a valuable complement to the market incentives provided by a cap-and-trade system or carbon tax. Such spending will be wasteful, however, if it merely subsidizes activity that would take place anyway or that is not well focused on reducing greenhouse-gas emissions.

Finally, economic analysis suggests that if there are instances where existing taxes have some disincentive effects that may dampen economic activity, receipts from cap-and-trade auctions or a carbon tax could be used to reduce those taxes. This, in turn, would lower any economic cost of restricting greenhouse-gas emissions. For example, CBO reports that the changes in economic activity required to achieve a 15 percent reduction in greenhouse-gas emissions would result in economic losses equivalent to roughly one-half of one percent of GDP in 2010 if the all the allowances were given away. If, however, all of the emission allowances were auctioned off and the proceeds were used to cut payroll taxes or corporate income taxes, that loss could be cut substantially. At the same time, CBO points out that using all of the auction proceeds exclusively to reduce net economic costs would itself come at a price, because those proceeds would not be available to address the regressive effects of increases in consumer costs or to make investments in basic research on clean technologies.

It should be noted, that these calculations of net economic loss do not take into account the substantial benefits that may arise from avoiding environmental and economic damages from climate change. Economic costs of the magnitude that have been reasonably estimated appear to be a modest price to pay to achieve the important goal of reducing greenhouse-gas emissions. In a well-designed climate-change policy, these are necessary costs for achieving the benefits of reduced greenhouse-gas emissions. They do not “harm” the public any more than expenditures on antibiotics to fight a serious infection “harm” a patient. Moreover, these “side effects” in terms of economic performance are modest (analogous to losing a day or two of work a year due to the antibiotic treatment in order to avoid greater harm from failing to treat the infection).

To return to the trade-off between reducing net economic costs and equitable treatment of families facing higher costs, CBO has found that using the proceeds from auctions exclusively for tax cuts would offset only a very modest fraction of the impact of higher energy costs on low-and moderate-income households, and that cutting corporate taxes would be highly regressive. With all of the auction receipts used for either a payroll tax cut or a reduction in corporate income taxes, the poorest 20 percent of households would have the largest net losses (as a share of income) while the richest 20 percent of households would end up with tax cuts that exceeded their increase in energy costs. (It also should be noted that analyses by CBO and others find that reducing long-term budget deficits would do substantially more to boost the economy over time than cutting taxes and have a far less regressive impact.)

While there are tradeoffs between economic efficiency and fairness in the design of climate-change policy, one policy that fails to measure up on *either* ground is giving away a substantial fraction of the permits to existing emitters. As CBO has explained,

Because giving allowances to energy producers would disproportionately benefit higher-income households and would preclude the possibility of using the allowance value to reduce taxes on capital and labor, such a strategy would appear to rate low from both a distributional and an efficiency perspective.³

If lawmakers capture the necessary revenue and make wise choices among competing claims in designing climate-change policy, they can achieve the economic and environmental benefits from reducing greenhouse-gas emissions while addressing the impact of higher prices on low-income consumers and other legitimate new claims on available resources. (It might even be possible to achieve some modest deficit reduction, which would be valuable at a time when, as this Committee well knows, the pressures on the federal budget will be increasing.)

If, however, lawmakers give away too many emissions rights to existing emitters, as a number of the bills currently pending in Congress would do, they will fail to capture sufficient resources to meet these needs, while conferring windfall profits on energy companies and other emitters. This latter course would risk large increases in deficits and debt (already on course to reach unsustainable levels in future decades), significant increases in poverty and hardship, and a further widening of the gap between rich and poor.

Designing Climate-Change Legislation That Shields Low-Income Households From Increased Poverty And Hardship

Making sure that sufficient resources are available to shield low-income households from increased poverty and hardship is crucial in the design of climate-change policies. But it is only the first step needed to avoid increases in poverty. It also is vital to use the resources made available for this purpose in a way that is effective in reaching low-income households, efficient (with low administrative costs), and consistent with energy conservation goals. At this early stage of the debate, no climate-change legislation introduced on Capitol Hill meets this goal, although there is a growing interest among a number of lawmakers in finding effective ways to protect low-income people from increased costs.

To shield vulnerable households from higher energy costs in a manner that is both effective and efficient, we recommend that policymakers follow these six basic principles.

1. ***Fully protect the most vulnerable households.*** Climate-change legislation should not make poor families poorer or push more people into poverty. To avoid that outcome, climate rebates should be designed to fully offset higher energy-related costs for low-income

³ Congressional Budget Office, letter to Senator Jeff Bingaman, Chairman, Committee on Energy and Natural Resources, United States Senate, July 9, 2007, pp. 3-4.

families. A good place to start is by fully protecting households in the bottom fifth of the income spectrum — those with average incomes of \$13,000 — or less than \$27,000 for a family of three. Families at modestly higher income levels that struggle to make ends meet will need some help, as well, in coping with higher bills.

2. ***Use mechanisms that reach all or nearly all low-income households.*** Some low-income households work for low wages and could receive their climate rebate through the tax code, such as through an increase in the Earned Income Tax Credit. But others are elderly, unemployed (especially during recessions), or have serious disabilities. Climate rebates need to reach all of them.

Fortunately, policymakers can tap existing mechanisms to reach the large number of low-income households that cannot be reached through a tax rebate mechanism because their incomes are so low they are not required to file a federal income tax return. For example, “climate-change rebates” could be provided through the electronic benefit transfer (EBT) systems that state human service agencies use to provide assistance to many poor people. Policymakers could fill any remaining gaps, and provide weatherization assistance, through some increases in the Low Income Home Energy Assistance Program.

3. ***Minimize red tape.*** Funds set aside for low-income consumers should go to intended beneficiaries, not to administrative costs or profits. Accordingly, policymakers should provide assistance as much as possible through existing, proven delivery mechanisms rather than new public or private bureaucracies.
4. ***Don’t focus solely on utility bills.*** For households in the bottom fifth of the population, higher home energy costs will account for *less than half* of the hit on their budgets from increased energy prices. And about 20 percent of the households in the bottom fifth have their utility bills reflected in their rent, so they pay for utilities only indirectly, through the rents their landlords charge. Policymakers should structure “climate-change rebates” so they can also help low-income families with these rent increases, as well as higher prices for gasoline and other products and services that are sensitive to energy costs.
5. ***Adjust for family size.*** Larger households should receive more help than smaller households because they have higher expenses. Families with several children will generally consume more energy, and consequently face larger burdens from increased energy costs, than individuals living alone. Many other forms of assistance vary by household size; this one should as well.
6. ***Adjust relief to reflect changing needs.*** Assistance for low-income consumers should be smaller in the beginning, when a cap-and-trade system or carbon tax is just phasing in and the impact on energy-related prices is less substantial, and larger when the system is fully in place.

Conclusion

The economic and distributional effects of climate-change policy will generate major new claims on the federal budget, especially the need to offset the regressive impact of higher energy prices.

But a well designed climate-change policy can also generate significant resources that can be used to avoid regressive outcomes and address other legitimate budgetary claims that arise from the new policy. Policymakers need to recognize the importance of generating adequate revenue and addressing fairness concerns to avoid ending up with a policy that increases poverty and further widens gaps between rich and poor, increases deficits and debt, or both.